

## WHAT IS CLAIMED IS

1. A method for detecting binding of a test substance to an  $\alpha 2\delta$  subunit of a calcium channel comprising the steps of:
  - 5 (a) contacting a neuroblastoma cell membrane sample comprising the  $\alpha 2\delta$  subunit of a calcium channel with gabapentin and a test substance;
  - (b) detecting binding of the gabapentin to the cell membrane; and
  - (c) comparing the level of binding of gabapentin as compared with a control sample lacking the test substance.
- 10 2. The method of claim 1 wherein the cell membranes are part of intact cells.
3. The method of claim 1 wherein the cell membranes are obtained from an isolated cell membrane preparation.
4. The method of claim 1 wherein the neuroblastoma cell membranes are IMR32, SK-N-MC or NG 108 cell membranes.
- 15 5. The method of claim 1 wherein the neuroblastoma cell membranes are differentiated neuroblastoma cell membranes.
6. The method of claim 5 wherein the differentiated cell membranes are obtained following incubation with BrdU.
7. The method of claim 1 further comprising the step of separating the cell  
20 membranes from unbound gabapentin.
8. The method of claim 1 wherein the comparing step comprises measuring binding of labeled gabapentin bound to the cell membranes.
9. A compound identified using the method of claim 1.

10. A test substance identified by a method comprising the steps of:

(a) contacting a neuroblastoma cell membrane sample comprising the  $\alpha 2\delta$

subunit of a calcium channel with gabapentin and a test substance;

(b) detecting binding of the gabapentin to the cell membrane; and

5 (c) comparing the level of binding of gabapentin as compared with a control  
sample lacking the test substance.

11. A method for identifying a test substance capable of binding to an  $\alpha 2\delta$  subunit  
of a calcium channel comprising the steps of:

10 (a) incubating an IMR32 cell membrane with radioactive gabapentin  
(GBP) and a test substance, wherein the membrane comprises an  $\alpha 2\delta$   
subunit of calcium channel and where the contact is for sufficient  
time to allow GBP binding to the  $\alpha 2\delta$  subunit of calcium channels in  
the cell membranes;

15 (b) separating the cell membranes from unbound radioactive GBP;  
(c) measuring binding of the radioactive GBP to the cell membranes;  
and

(d) identifying a compound that inhibits GBP binding by a reduction  
of the amount of radioactive GBP in step (c) to an established  
20 control.